

PTO/SB/08A (07-05)

Approved for use through 07/31/2006. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 1

Complete If Known

Application Number	10/632817
Filing Date	August 04, 2003
First Named Inventor	NEIL ANDRE ROBERTS
Group Art Unit	1751
Examiner Name	John R. Hardee
Attorney Docket Number	VK0001USCIP

FOREIGN PATENT DOCUMENTS

Examiner Signature	Hawder	Date Considered	9/06/06
--------------------	--------	-----------------	---------

***EXAMINER:** Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional). 2 See Kind Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. 6 Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.



PTO/SB/08B (07-05)

Approved for use through 06/30/2006. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1448A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 2

Complete if Known

Application Number	10/632817
Filing Date	August 04, 2003
First Named Inventor	NEIL ANDRE ROBERTS
Group Art Unit	1751
Examiner Name	John R. Hardee

Attorney Docket Number VK0001USCIP

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		BUTLER D., "R22 drip-in a success at BRE", Refrigeration and Air Conditioning, pp. 49-50 (1994)	<input type="checkbox"/>
		Fluorocarbon azeotropes, Research Disclosure 16265 (1977)	<input type="checkbox"/>
		JP 01 139878 (English Translation of the Abstract) <i>1989 NO MONTH AVAIL.</i>	<input type="checkbox"/>
		PEARSON SF, "Uses of hydrocarbon refrigerants", I.I.F.-I.I.R. Commissions B1, B2, E1 and E2, pp. 439-46 (1996)	<input type="checkbox"/>
		E-mail reply from Herrick Conference to Felix Flohr dated May 27, 2003	<input type="checkbox"/>
		Internet citation, "Conference Organizing Committee", http://www.ecn.purdue.edu/Herrick/Events/organize-frame.htm	<input type="checkbox"/>
		Internet citation, "Registration Information", http://www.ecn.purdue.edu/Herrick/Events/Registration.htm	<input type="checkbox"/>
		ASHRAE Standard 34-2001, "Contents", pp.7 and 13	<input type="checkbox"/>
		Sworn Statement by Christoph Meurer <i>9/07/03</i>	<input type="checkbox"/>
		BIRETT K, "Information sheets on hazardous substances" (1996) <i>NO MONTH AVAIL</i>	<input type="checkbox"/>
		SOFFIENTINI ET AL., "Evaluation of alternative refrigerants when retrofitting R-22 refrigeration systems", Centro Studio Galileo – Industria & Formazione Eleventh European Conference, Milan, Italy (2005)	<input type="checkbox"/>

Examiner Signature

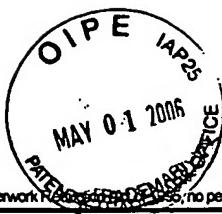
Hardee

Date Considered

9/06/06

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.



PTO/SB/08B (07-05)

Approved for use through 06/30/2006, OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 2 of 2

<i>Complete if Known</i>	
Application Number	10/632817
Filing Date	August 04, 2003
First Named Inventor	NEIL ANDRE ROBERTS
Group Art Unit	1751
Examiner Name	John R. Hardee
Attorney Docket Number	VK0001USCIP

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Signature	Hawde	Date Considered	9/06/06
--------------------	-------	-----------------	---------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

AUG. 16. 2006 1:35PM

RECEIVED
CENTRAL FAX CENTER

NO. 4495 P. 4

AUG 16 2006

PTO/SB/08A (07-05)

Approved for use through 07/31/2006. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

U.S. PATENT AND TRADEMARK OFFICE
is not required to respond to a collection of information unless it contains a valid OMB control number.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to or collect on information contained in this form.

Substitute for Form 1449A/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT		Application Number	10/632817
(Use as many sheets as necessary)		Filing Date	August 04, 2003
		First Named Inventor	NEIL ANDRE ROBERTS
		Group Art Unit	1751
		Examiner Name	John R. Hardee
		Attorney Docket Number	VK0001USCIP
Sheet	1	of	1

U.S. PATENT DOCUMENTS

FOREIGN PATENT DOCUMENTS

***EXAMINER:** Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional). 2 See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.2). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. 6 Applicant is to place a check mark here if English translation is attached.

This collection of information is required by 37 CFR 1.87 and 1.88. The information is required to obtain or retain a benefit by the public which is to be (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

PAGE 4/42 * RCV'D AT 8/16/2006 1:35:59 PM [Eastern Daylight Time] * SVR:USPTO-EFXRF-1/22 * DNI:2738300 * CSID:302 992 3257 * DURATION (mm:ss):13:36

AUG. 14 2006



Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 3

Complete If Known

Application Number	10/632,817
Filing Date	August 4, 2003
First Named Inventor	Neil Andre Roberts
Group Art Unit	1751
Examiner Name	John R. Hardee
Attorney Docket Number	VK0001USCIP

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number		Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number – Kind Code ² (if known)	Publication Date MM-DD-YYYY		
		US - 4,755,316	07-05-1988	Magid et al.	
		US - 5,520,833	05-28-1996	Kaneko	
		US - 5,688,432	11-18-1997	Pearson	
		US - 5,954,995	09-21-1999	Goble	
		US - 6,065,305	05-23-2000	Arman et al.	
		US - 6,076,372	06-20-2000	Acharya et al.	
		US - 6,230,519 B1	05-15-2001	Arman et al.	
		US - 6,511,610 B2	01-28-2003	Caron et al.	
		US - 6,526,764 B1	03-04-2003	Singh et al.	
		US - 6,606,868 B1	08-19-2003	Powell et al.	
		US - 6,629,419 B1	10-07-2003	Powell et al.	
		US - 6,695,973 B1	02-24-2004	Musso et al.	
		US - 6,783,691 B1	08-31-2004	Bivens et al.	
		US - 2002/0050583 A1	05-02-2002	Caron et al.	
	US -				

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document		Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ₆
		CountryCode ³ Number ⁴	Kind Code ⁵ (if known)			
		JP 2002 228307 A	08-14-2002	Matsushita Electric		X
		CN 1183451	06-03-1998	Gu Chujun		X
		CN 1280166 A	01-17-2001	Qinghua University		X
		EP 0 399 817 B1	11-28-1990	DuPont		
		EP 0 427 604 B1	04-21-1993	Elf Atochem S.A.		
		EP 0 539 952 B1	05-05-1993	Matsushita Electric		
		EP 0 565 265 B1	12-13-1995	Star Refrigeration Ltd.		
		EP 0 659 862 A1	06-28-1995	Sanyo Electric Co.		
		EP 0 856 571 B1	04-16-2003	Showa Denko Kabushiki Kaisha		
		EP 1 184 438 B1	03-06-2002	Atofina		
		EP 1 193 305 A1	04-03-2002	Honeywell International		
		GB 2 247 462 A	04-03-1992	Star Refrigeration Ltd.		
		GB 2 250 514 A	06-10-1992	Star Refrigeration Ltd.		
		GB 2 327 427 A	01-27-1999	Rhodia Limited		
		GB 9923088.0	09-30-1999	Refrigerant Products Ltd.		
		GB 0005043.5	03-02-2000	Refrigerant Products Ltd.		
		GB 0010171.7	04-27-2000	Refrigerant Products Ltd.		
		GB 2 356 867 A	06-06-2001	Rhodia Limited		

Examiner Signature

Hardee

Date Considered

9/06/06

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional). 2 See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (MPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. 6 Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

Complete if Known

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 2 of 3

Application Number	10/632,817
Filing Date	August 4, 2003
First Named Inventor	Neil Andre Roberts
Group Art Unit	1751
Examiner Name	John R. Hardee

Attorney Docket Number VK0001USCIP

U.S. PATENT DOCUMENTS

Examiner Initials *	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number – Kind Code ² (if known)			
	US -				
	US -				
	US -				
	US -				
	US -				
	US -				

FOREIGN PATENT DOCUMENTS

Examiner Initials *	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ₆
		CountryCode ³ Number ⁴ Kind Code ⁵ (if known)				
		JP 01108291	10-19-1997	Daikin Kogyo KK		<input type="checkbox"/>
		JP 2576161 B2 (JP 1-139675)	01-29-1997	Asahi Glass KK		X
		JP 2576162 (JP 1-139675)	01-29-1997	Asahi Glass Co. Ltd.		X
		JP 2584337 B2 (JP 4-18484)	02-26-1997	Sanyo Electric Co. Ltd.		X
		JP 1997059611 A	03-04-1997	Sanyo Electric Co. Ltd.		X
		JP 3127138 B2	01-22-2001	Showa Denko K.K.		X
		JP 3754198 B2	12-22-2005	Sanyo Electric Co. Ltd.		X
		KR 1997-022058	05-28-1997	(Kosh-N) Hankook Shimwha Co. et al.		X
		RU 2 072 382 C	01-27-1997	Podchemjaev et al.		<input type="checkbox"/>
		RU 2 135 541	08-27-1999	Rossijskij nauchnyj tsentr "Prikladnaja khimija"		<input type="checkbox"/>
		RU 2 161 637 C2	10-01-2001	Beljaev, Andrej Jur'evich		<input type="checkbox"/>
		WO 93/01152 A2	01-21-1993	DuPont		<input type="checkbox"/>
		WO 93/15163 A1	08-05-1993	Allied-Signal		<input type="checkbox"/>
		WO 94/00529 A1	01-06-1994	Great Lakes Chemical Corporation		<input type="checkbox"/>
		WO 00/56834	09-28-2000	DuPont		<input type="checkbox"/>
		WO 01/23491 A1	04-05-2001	Refrigerant Products Ltd.		<input type="checkbox"/>
		WO 01/23492 A1	04-05-2001	Refrigerant Products Ltd.		<input type="checkbox"/>
		WO 01 23493 A1	04-05-2001	Refrigerant Products Ltd.		<input type="checkbox"/>
		WO 02/24829 A1	03-28-2002	Rhodia Organizue Fine Limited		<input type="checkbox"/>
		WO 02 26912 A	04-04-2002	Honeywell International		<input type="checkbox"/>
		WO 02 26913 A2	04-04-2002	Honeywell International		<input type="checkbox"/>

Examiner Signature

Date Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional). 2 See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. 6 Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Sheet 3 of 3

Complete if Known

Application Number	10/632817
Filing Date	August 04, 2003
First Named Inventor	NEIL ANDRE ROBERTS
Group Art Unit	1751
Examiner Name	John R. Hardee
Attorney Docket Number	VK0001USCIP

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
R		WILSON, DP, RICHARD, RG; "Determination of Refrigerant Lower Flammability Limits in Compliance with Proposed Addendum p to Standard 34"; ASHRAE Transactions 2002, v. 108; pp. 1-17; June 23, 2002	<input type="checkbox"/>
R		ROBERTS, NA, PEARSON, SF; "High Efficiency R22 Replacement (ISCEON 59, a mixture of R125, R134a and isobutane)"; Congress Symposium Meeting-Colloque, 1996 Int. Compressor Eng. Conf., Purdue, July 23, 1996	<input type="checkbox"/>
R		ROBERTS, NA; "Energy Saving Refrigerant Blends Comprising R125, R134a, R600 or R600a"; European Conference (Milan); pp-108; June 17-18, 2005	<input type="checkbox"/>
R		" Final Draft International Standard-Projet Final de Norme Internationale", International Electrotechnical Commission, IEC; December 17, 2004	<input type="checkbox"/>
R		SANDERS PA., "Table 14-2 Flammability Limits of Various Propellants in Air", Handbook of Aerosol Technology, Second Edition, Malabar, Florida, pp. 233, 250 (1987)	<input type="checkbox"/>
		Test Protocol for Determination of Refrigerant Properties (Description of Equipment, Chart: Position of Thermocouples and Transducers on LT-Calorimeter, Operating Conditions)	<input type="checkbox"/>
R		Chart: Vapor Composition Flammability Data 3/2006	<input type="checkbox"/>
R		English Abstract: JP 01108291 10/97	<input checked="" type="checkbox"/>
R		English Abstract: RU 2161637 10/01	<input checked="" type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>

Examiner Signature

Harder

Date Considered

9/06/06

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.